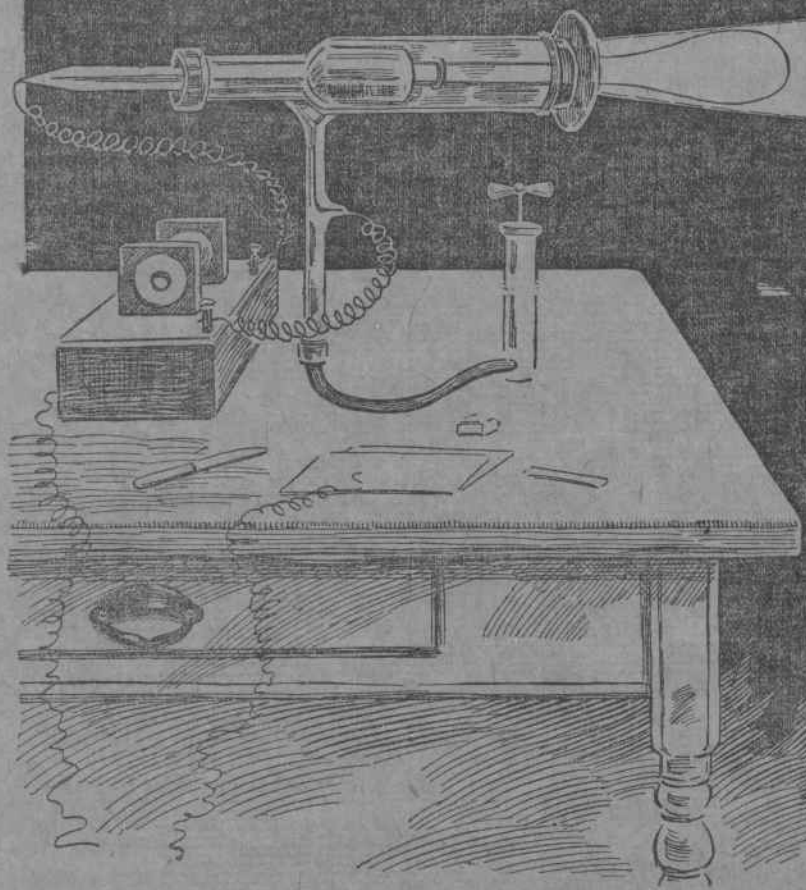


THE AMAZING POSSIBILITIES OF PROFESSOR ROENTGEN'S GREAT DISCOVERY.

EXPERIMENTING WITH THE NEW CATHODE LIGHT TO CURE CONSUMPTION.



A NIGHT WITH WIZARD EDISON IN HIS WORKSHOP.

Watching the Tireless Inventor While He Experiments with the Mysterious New Cathode Light in the Hope of Photographing the Human Brain.

It was within an hour of midnight when I walked along the Valley road, leading to Edison's laboratory at Orange, N. J.

Llewellyn Park was asleep under the stars. The white cottages on either side of the road looked like grimy ghosts in the clear light, and from an occasional upper window a dim lamp sent a faint, spectral ray across the thin glaze of snow which covered the soft ground. The quiet was profound.

I knew that for days and nights he had kept endless vigil over the wonderful, new cathode ray with the purpose of utilizing it for research and examination of the still more wonderful human brain. Through one night I was to watch with him over the dancing violet light that purges even this great sorcerer of modern times.

I was to wait from the first hour of morning until the dawn, expecting that each moment would bring forth the elation of this new force, which some science prophets say is the elixir of life itself, to triumph over disease and death and deny and the grave.

As I entered the reception room of the laboratory I could at first see but the central figure, which seemed to dominate the apartment. It was a towering winged angel of Italian marble poised upon an angelic pedestal. In the lean, tenuous hands, raised high above its head, glowed a huge ball of electric fire.

The amazing eyes beneath a triumphant brow looked out upon thousands of volumes and portraits of great men. Models of electric motors and sections of cable by the hundred were about the room, which was luxuriously with rare Eastern rugs and the grateful warmth of the big pine logs which burned upon the hearth.

THE WIZARD AT WORK.

But the workshop where I found Edison deep in his study of the new ray was as innocent of luxury and decoration as those where his men were working with him through the night.

It was as picturesque in its bareness as the pallid, unshaven man with soiled hands and rumpled hair who sat at a pine table leaning upon his elbows and looking before him at a glowing tube of light which, when my eyes rested upon it, made me for the time forget the man I had come to see.

It was as beautiful as the very vital principle of light itself condensed in one small space. The glory of dawn and sunset, the glimmer of moonlight, the fire of oil, the fascination of flame, all these bubbled and sparkled and danced in that small globe where violet and rose and purple and tawny gold fought for the mastery—alive, subtle, sinister, perishing one moment to blaze forth the next in terrific splendor.

All that is most radiant in color, in movement and in light gleamed and glimmered in that magic flame. It fascinated me like the fire in a room or the glint in the eye of a snake. If the rosy spark that lurks in the heart of an opal could be vitalized and made into liquid light, I should imagine that it would look like this wonder-

TO KILL THE GERMS OF DISEASE.

The marvellous possibilities of the new cathode photograph are just dawning upon the medical world.

Physicians in London and Berlin have simultaneously begun experiments upon the most astonishing theory which has ever startled the scientists of the great European capitals.

It is believed that in the wonderful cathode light invented by Professor Roentgen lies the perfect cure of diseases which have hitherto resisted the tireless efforts of medical science.

If the theory of these doctors is correct, the cure for consumption, cholera, diphtheria, scarlet fever, typhoid and typhus fever and small-pox is at last discovered.

While experimenting and testing the powers of the new cathode light, the Berlin scientists found that its rays possessed many of the properties of sunlight. By spectrum analysis it was proved that the cathode rays registered a strong violet—stronger than the violet rays of sunlight.

Professor Marshall Hall, the eminent British scientist, proved long ago that rays of sunlight destroyed the germs of disease. The deadly microbes of the most fatal maladies were killed by exposure to the sun's rays. Experimenting further, Professor Marshall Hall found that the violet rays were the germicide rays.

When the laboratory experiments of the German scientists brought out the fact that the new cathode light showed the same chemical composition as the violet rays of sunshine the medical men knew what this discovery meant. They knew that at last they had within their grasp a light which can penetrate to the interior organs of the human body, and carry along with it the power to destroy the microbes of disease.

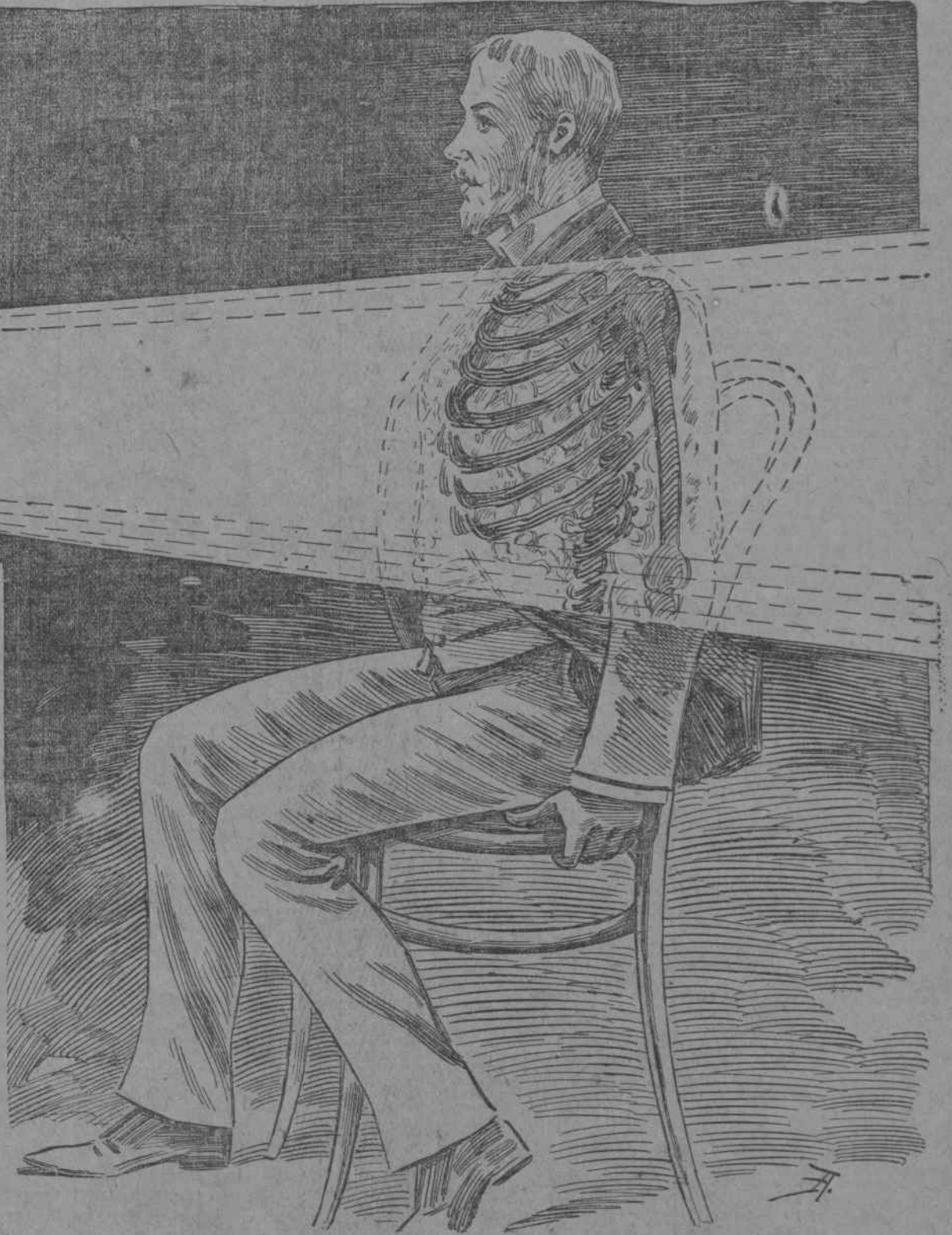
This is what the physicians of London and Berlin are now earnestly experimenting to prove.

If this marvellous cathode light, which pierces clothes and flesh (but not bones), still carries along through the outer covering of the body the germicide rays of sunlight—if, in other words, the mere flooding of the lungs with the new cathode light destroys the germs of tuberculosis—then the cure of consumption has been found!

If the penetrating flashes of the cathode light can illuminate the bowels and intestines with a chemical ray deadly to the cholera bacillus—then cholera is a disease no longer to be feared!

If the fevered blood vessels and arteries which burn with the germicide rays of the cathode light—then these diseases are within the easy grasp of modern science.

With the entire world of science and medicine concentrating its skill and ingenuity on the possibilities of the new cathode light, no one can foretell what the laboratory experiments of Europe and America will bring forth.



results. I attach the still open tubes at the end of the bulb to an air pump and start to exhaust the air. Then at different times during this process I have a picture made. You see this clock work. I hope to get a fine picture of the entire system of wheels."

"I noticed that the clock was placed against an ordinary photographic plate holder. The clockwork was between this and the glowing bulb of fire."

"How are the tubes made, Mr. Edison?" I asked.

"In this way: When we get the crude bulb it is open at what is to be the tap where the incandescent bulb screws into the holder. It has a slender tube at the other end, which one can notice in the finished bulb as a mere point of glass which looks as though placed there for ornamentation."

He picked one up from a nearby shelf and showed it to me. "Now, I have this open end softened in a flame and the narrow end swelled out to about half an inch bigger diameter than it would be for a lamp. Then the glass is drawn in and closed up upon a platinum wire, which is sealed in the glass like this."

"Now, at one side of the larger part of the bulb the glass is softened and a hole opened, and this is also sealed up upon another platinum wire. Attached to each of these wires and inside of the bulb are aluminum disks about half an inch in diameter. These disks form the positive and negative electrodes between which the electric arc plays, producing these wonderful effects."

"There are many things that I cannot understand about this new ray," he said. "Many of the plates have come out black and spoiled, and I can only attribute this to sparks which form about the bulbs. Sometimes I think that the shining nails in the frame make a light within the holder. I have found that celluloid is almost entirely transparent to the new rays, and I have been using it to cut off the other light."

A TEST OF TUBES.

"I have been testing tubes to-night," he said, in answer to my question. "Each tube, you know, has a history as to its vacuum. This is always put down in black and white as they are sealed off the pumps after exhaustion. I make shadow-graphs with them, always using the same subjects. These strips of metal are the best. They get an even exposure of forty minutes before each bulb, and the developed negatives tell which has given the best result."

"Knowing from each bulb's history its particular vacuum, I am able to tell just how much of vacuum is necessary for the purposes required. Then I can go ahead and have a stock of bulbs made. The bulbs are a very important quantity in these experiments, and sometimes there are great delay and difficulty on account of them."

"For example, some of them lose vacuum when they are sealed after exhaustion. The sensitive plates are effected during exposure by the escape of electricity, and for that reason I now place a sheet of celluloid between the bulb and the plate to prevent induction."

"Do you think these wonderful X rays can be utilized in the location and cure of disease?" I asked him.

"Surely, I see no reason why they cannot and will not. And, besides that, it is possible that these rays can be used to sterilize water and destroy bacteria. All light is purifying and an enemy to bacilli. I shall test the sterilizing qualities of the ray in this way: Water into which cultured bacteria have been introduced will be put in two test tubes. In a few days

these cultures will develop, and the water would become cloudy with atoms.

"I shall place one of these tubes under a fluorescent bulb, and the other will be put away to await the development of the undisturbed bacteria. If the X rays are efficacious there will be no bacilli development in the exposed tube."

INCESSANT LABOR FOR EVERY ONE.

"We were interrupted at this point, and Mr. Edison left me alone with the light. A brawny German, with his shirt sleeves rolled up over his arms, yawned eloquently as he passed through the room.

"Are you very tired?" I asked him.

"Yes, I am," he said; "this is the third night I've been working here till morning, and there is no telling when Mr. Edison will stop once he begins in this way. He goes on himself without eating or sleeping for a week or ten days and he's jolly over it."

"Do you mean to say that he is here all the time?" I asked.

"Sure," answered the man. "Half the time he don't go home at all. He just throws himself down anywhere when he is actually too exhausted to stand longer and sleeps for an hour or two, and then he's up and at it again as hard as ever."

"Mrs. Edison tries to get him away from here in all sorts of ways. She telephones and sends messages and drives up, and calls to take him out, but it's no use. He won't leave the place. But he is so good-natured that we all like to work for him no matter how late it is or how early. If he's there we'd feel out of the whole thing; as it is," he waved his hand over the violet light.

"We feel as though we took part in all these great inventions of Mr. Edison."

"The most awful thing happened here a week ago, and the man who did it has been sinking in his shoes ever since. You know Mr. Edison likes to wear his old clothes about the laboratory, and, as I tell you, he lays down to sleep on a battery as comfortable as most people would on a bed. One night last week he took a fancy to a pile of boards that are in one of the experiment rooms. He was curled up on it looking like a tramp when along came one of the house-keepers with a broom. He thought Mr. Edison was one of the workmen taking a snooze and thought it would be a fine joke to wake him. So he took up one of the boards and brought it down with a whack upon Mr. Edison's body. He started up with a yell and well, you might have seen that man hurry away. But Mr. Edison just laughed and saw how it was and started off for his experiments again."

EDISON SCORES A TRIUMPH.

Before Mr. Edison returned I was drowsy from the odor of the acids and the vibration of the dynamos. He came back triumphant with another photograph taken through still another thickness of wood. He showed me the plate and laughed with delight over the result.

"I expect I'll take a good photograph of your brain in a day or two with these tubes," he said. "I've no doubt that I could take one now, but I want to get at this methodically and perfectly. You can see that these strips are even more distinct than they were in the last plate."

There were a number of men around Mr. Edison now, all investigating him and examining his apparatus. It was surprising to notice his wonderful patience, his jollity, his courtesy to the workmen around him as well as to his visitors.

Dawn was breaking in the east when I took my leave of the Wizard. He was smiling and still cheerful as he pored over his beloved tubes and plates, pallid and worn looking in the cold light of morning. Some of the men had fallen to sleep round in corners on the lower floor of the laboratory.

But the Wizard met the day with a smile. And as the gray light came through the casement I noticed that it made everything else look cheerless, cold and wan, while the little violet and rose flame in the bulb upon the table danced and sparkled as as madly as ever.

KATE MATTERSON.

NEW YORK'S WILD BEASTS.

In Some Localities They Are More Numerous Than in African Jungles, but Are Sadly Lacking in Independence.

In many parts of New York City the population of wild animals is denser than in most African jungles. The beasts do not, of course, go about seeking whom they may devour.

This is not due to any change in the sentiments of these residents of the city, but to the fact that they are kept quite as safely under lock and key as the worst criminals. This curious part of New York's population has increased very rapidly during the past few years. Large and flourishing families of lions, tigers and leopards have moved into town.

They do not all reside at the Zoo, for many years the most fashionable neighborhood for these captives. Many of them have taken up their residences along the Bowery, in the various dime and half-dime museums. There is also a thriving community on William street.

New York has really become a popular winter resort for many of the largest and fiercest of this "four hundred." These animals are in most cases members of travelling circus companies.

The most interesting of the neighborhoods affected by these untamed residents of Gotham is along William street. There are half a dozen establishments on this street which are occupied for the most part by wild animals. These curious apartment houses are the animal stores, where all sorts of quadrupeds, both gentle and fierce, are to be found. A person who is out shopping for one of these extraordinary pets can purchase anything in one of these places from a Jersey mosquito to an African elephant. The animals are usually secure in cages of various shapes and sizes.

Many of the shops keep quite a stock on hand. The business in these noisy establishments is carried on in much the same way as it is in other stores. Snakes, for instance, are sold by the yard and special prices are put upon rattlesnakes. Lions, on the other hand, are sold by the pound and according to the thickness of the fringe of their manes. Customers are quite as particular in buying a bear or seal to get one which is not moth-eaten as they would be in buying one of these skins for a cloak or a mantle.

A careful census of the wild animal population of New York City was taken the other day by a Sunday Journal reporter. He made a cage to cage visitation. Results show that there are upward of a hundred more or less ferocious beasts in town at present. Some twenty-five of these are in the Central Park Zoo.

There is, of course, almost as much difference in the homes of wild animals as in those of humanity itself. There is luxury and elegance in the cages of wild animals in New York, and there are animals living in poverty and destitution. There are ferocious beasts kept as pets in palaces on the West Side which live in the height of the fashion and dine regularly on the fat of the land. In contrast with these are the cages of some of the animals in the nickel museums on the Bowery, where they are compelled to live to a luxurious old age in poverty. Like people, they have their ups and downs, and the meek and poverty-stricken Bowery lion of to-day may be the "raging Numidian" of a big circus to-morrow.